IOWA DEPARTMENT OF NATURAL RESOURCES ADMINISTRATIVE CONSENT ORDER

IN THE MATTER OF:

CITY OF HUMBOLDT

Public Water Supply Facility No. 4641064

ADMINISTRATIVE CONSENT ORDER NO. 2014-WS-03

TO: Mayor and Council Members

City of Humboldt 29 Fifth Street South Humboldt, Iowa 50548

I. SUMMARY

This administrative consent order (order) is issued by the Iowa Department of Natural Resources (Department) to the City of Humboldt (City) for violations of the City's water supply operation permit and the Department's water supply rule requirements. This order requires the City to:

- Complete construction of the City's upgraded water treatment plant by June 1, 2014; and
- Pay an administrative penalty as set forth in this order.

Any questions regarding this order should be directed to:

Relating to technical requirements:

Marie Leat
Environmental Specialist
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, Iowa 50319-0034
Ph: 515/725-0358

Direct payment of penalty to:

Iowa Department of Natural Resources 502 East 9th Street Des Moines, Iowa 50319-0034

Relating to legal requirements:

Diana Hansen,
Attorney at Law
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, Iowa 50319-0034
Ph: 515/281-6267

II. JURISDICTION

This order is issued pursuant to Iowa Code section 455B.175(1), which authorizes the Director to issue any order necessary to secure compliance with or prevent a violation of Iowa Code chapter 455B, Division III, Part 1, and the rules promulgated or permits issued pursuant thereto; and Iowa Code section 455B.109 and 567 Iowa Administrative Code (IAC) chapter 10 (455B), which authorize the Director to assess penalties.

III. STATEMENT OF FACTS

- 1. The City's municipal water department includes the public water supply (PWS) treatment plant and all water storage, distribution system piping and other appurtenances associated with a PWS system. The City's water supply system serves a population of 4,690 and is considered a community PWS system. This PWS was determined to be an influenced groundwater (IGW) system following an evaluation conducted by the Department in September 2010.
- 2. The Department's Field Office No. 2 (FO2) notified the City, by a letter dated February 11, 2011, that the source water for the PWS system was determined to be moderate risk for contamination by surface water or IGW, due to the microscopic particulate analysis (MPA) results from the sample collected by the Department on September 28, 2010, as allowed under Department rule 567 IAC 43.5(1)"b"(4). The letter indicated that since the City was planning to upgrade the water treatment plant in order to treat surface water, and since the source water for the PWS system is IGW, the federal Surface Water Treatment Rule (SWTR) requirements for SWTR disinfection and filtration apply. See Department rules 567 IAC 43.5(455B), 567 IAC 43.10(455B) and 567 IAC 43.11(455B).
- 3. The February 11, 2011 FO 2 letter also informed the City that if the PWS decided to keep running the water treatment plant to meet groundwater treatment requirements, which in effect would be disputing the IGW classification by the Department, then the PWS would be required to collect quarterly water samples for MPA testing during each quarter in 2011. The PWS only collected two quarterly samples for MPA testing. The March 27, 2011 sample scored a moderate risk for IGW. This demonstrated to the Department that the PWS source water should be classified as a groundwater source under the direct influence of surface water or IGW.
- 4. On May 9, 2011, the Department issued a PWS operation permit with a compliance schedule requiring completion of the remainder of quarterly water sampling for MPA testing by December 31, 2011.

- 5. A May 18, 2011 letter from the Department's Water Supply Engineering Section (WSES) reminded the PWS that if the source water was confirmed to be classified as IGW, then surface water treatment would be required. This treatment would be required to include SWTR disinfection and filtration. See Department rules 567 IAC 43.5(455B), 567 IAC 43.10(455B) and 567 IAC 43.11(455B). The letter indicated the Department was in general agreement with a report from the PWS which included plans for installation of an upgraded treatment plant which would treat for surface water, including adding SWTR disinfection and filtration.
- 6. On February 10, 2012, the Department issued a notice of violation letter (NOV) for failure to meet the compliance schedule included in the May 9, 2011 PWS operation permit. The Department issued the NOV since the PWS did not conduct all four quarters of water sampling for MPA testing during 2011. Samples were collected only for the first and second calendar quarters of 2011.
- 7. On February 23, 2012, a revised water supply operation permit was issued which included a compliance schedule to upgrade the City's water treatment plant to comply with surface water treatment requirements or become solely a groundwater PWS system. The City could become solely a groundwater PWS system by installation of new groundwater wells. The deadline for compliance stated in the revised permit was August 10, 2013. The August 10, 2013 deadline was eighteen months from the date the Department sent a NOV to the City due to the PWS not completing all MPA testing. The eighteen month deadline was set due to Department subrule 567 IAC 43.5(3)"a". This subrule requires a PWS to install filtration within eighteen months of the Department's determination that filtration is required.
- 8. On May 17, 2012, the Department's WSES issued written construction permit approval to upgrade the City's water treatment plant to comply with surface water treatment requirements.
- 9. On May 23, 2012, the Department received a written request from the City to extend the compliance schedule deadline for completion of the water treatment plant upgrade.
- 10. On June 13, 2012, the Department approved the City's extension request. The Department issued a revised water supply operation permit on June 13, 2012 that included a revised compliance schedule deadline of December 31, 2013.
- 11. The Department issued a written NOV dated January 2, 2014. The NOV was issued due to a compliance schedule violation for not meeting the December 31, 2013 deadline for completion of an upgraded water treatment plant to meet Department rule

requirements for PWS systems determined by the Department to be under the direct influence of surface water or IGW.

12. On March 25, 2014, the Department sent the City a letter informing the City that it had been referred to the Legal Services Bureau for enforcement. The City did not respond to that letter. The City did not meet the December 31, 2013 compliance schedule deadline included in a revised operation permit and as of March 31, 2104, the treatment plant upgrade had not been completed and operational. Since the December 31, 2013 deadline was not met, this PWS was in violation of Department rules due to not meeting the compliance schedule deadline established by the operation permit.

IV. CONCLUSIONS OF LAW

- 1. Iowa Code section 455B.172 makes this Department the agency of the state to conduct the PWS program. Iowa Code section 455B.171 defines a PWS system as a system for the provision of piped water for human consumption, if the system has at least fifteen service connections or regularly serves at least twenty-five individuals. Iowa Code sections 455B.173(3), (5), and (6) authorize the Environmental Protection Commission (Commission) to promulgate rules relating to the operation of PWS systems and to adopt drinking water standards to assure compliance with federal standards adopted pursuant to the federal Safe Drinking Water Act. The Commission has the authority to adopt rules relating to monitoring, record keeping, and reporting requirements for any PWS. The Commission has adopted such rules at 567 IAC chapters 40-43.
- 2. Rule 567 IAC 40.2 (455B) further defines PWS by defining "community water system" as a PWS which has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents, consistent with federal regulations. A "noncommunity water system" is any other PWS. This facility is a community water system.
- 3. Subrule 43.2(2) requires that no person shall operate any PWS system or part thereof without, or contrary to any condition of, an operation permit issued by the Director. Subrule 43.2(5)"a", states that operation permits may contain such conditions as are deemed necessary by the Director to ensure compliance with all applicable rules of the Department, to ensure that the PWS system is properly maintained, to ensure that potential hazards to the water consumer are eliminated promptly, and to ensure that the requirements of the Safe Drinking Water Act are met. Subrule 43.2(5)"b," states that where one or more MCLs, treatment techniques, designated health advisories, or action levels cannot be met immediately, a compliance schedule for achieving compliance with standards may be made a condition of the permit. The City violated these subrules by its failure to comply with the compliance schedule in its water supply operation permit.

- 4. Department rule 567 IAC 43.5(455B) pertains to filtration and disinfection for surface water and IGW public water supply systems. The applicability and general requirements of this rule are found in subrule 43.5(1)"a" which provides as follows:
- a. These rules apply to all public water supply systems using surface water or groundwater under the direct influence of surface water, in whole or in part, and establish criteria under which filtration is required as a treatment technique. In addition, these rules establish treatment technique requirements in lieu of maximum contaminant levels for *Giardia lamblia*, heterotrophic plate count bacteria, *Legionella*, viruses and turbidity. Each public water system with a surface water source or a groundwater source under the direct influence of surface water must provide treatment of that source which complies with these treatment technique requirements. Systems which serve at least 10,000 persons must also comply with the requirements of 567—43.9(455B). Systems which serve fewer than 10,000 persons must also comply with the requirements of 567—43.10(455B). The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:
- (1) At least 99.9 percent (3-log) removal or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or after the first customer; and
- (2) At least 99.9 percent (4-log) removal or inactivation of viruses between a point downstream before or at the first customer.
- 5. Subrule 43.5(1)"b" provides in part as follows:
- b. Criteria for identification of groundwater under the direct influence of surface water. "Groundwater under the direct influence of surface water" means any water beneath the surface of the ground with: (1) significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia*, or (2) significant and relatively rapid shifts in water characteristics such as turbidity (particulate content), temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with the criteria established by the department. The department determination of direct influence may be based on site-specific measurements of water quality or documentation of well construction characteristics and geology with field evaluation. Only surface water and groundwater sources under the direct influence of surface water that are at risk to the contamination from *Giardia* cysts are subject to the requirements of this rule. Groundwater sources shall not be subject to this rule.
- 6. The Department conducts an evaluation process to delineate between surface water, groundwater under the direct influence of surface water and groundwater. This evaluation process is set out in subrule 43.5(1)"b"(1)-(4). The evaluation process can include a preliminary evaluation of information on the source to determine if the source is an obvious surface water such as a pond, lake or stream or whether it is groundwater under the direct influence of surface water. The preliminary evaluation can include review of

surveys, reports, geological information of the area, physical properties of the source, and a review of the Department's and the PWS system's records. See subrule 43.5(1)"b"(1) concerning the preliminary evaluation.

- 7. A formal evaluation process is described in subrule 43.5(1)"b"(3). This subrule provides as follows:
- (3) Formal evaluation. The evaluation shall be conducted by the department or a licensed professional engineer at the direction of the public water supply. The evaluation shall include:
- 1. Complete file review. In addition to the information gathered in 43.5(1)"b"(1), the complete file review shall consider but not be limited to: design and construction details; evidence of direct water contamination; water quality analysis; indications of waterborne disease outbreaks; operational procedures; and customer complaints regarding water quality or water-related infectious illness. Sources other than a well source shall be evaluated in a like manner to include a field survey.
- 2. Field survey. A field survey shall substantiate findings of the complete file review and determine if the source is at risk to pathogens from direct surface water influence. The field survey shall examine the following criteria for evidence that surface water enters the source through defects in the source which include but are not limited to: a lack of a surface seal on wells, infiltration gallery laterals exposed to surface water, springs open to the atmosphere, surface runoff entering a spring or other collector, and distances to obvious surface water sources.

A report summarizing the findings of the complete file review and field survey shall be submitted to the department for final review and classification of the source. If the complete file review or field survey demonstrates conclusively that the source is subject to the direct surface water influence, the source shall be classified as under the direct influence of surface water. Either method or both may be used to demonstrate that the source is a surface water or groundwater under the direct influence of surface water. If the findings do not demonstrate conclusive evidence of direct influence of surface water, the analysis outlined in 43.5(1)"b" (4) should be conducted.

8. The City's PWS was determined to be a groundwater system under the direct influence of surface water or IGW by a formal evaluation conducted by the Department in September 2010. The evaluation was conducted using the criteria in subrule 43.5(1)"b"(4). As the result of this determination, the City's PWS was required to have filtration and disinfection in accordance with Department rule 43.5(455B) and Department rule 43.10(455B), which requires enhanced filtration and disinfection requirements for IGW systems serving fewer than 10,000 people. As of March 31, 2014, the City had not met these rule requirements for the City's PWS system.

9. Pursuant to Department subrule 43.5(3)"a", a PWS that uses a groundwater source under the direct influence of surface water must provide treatment consisting of disinfection, as specified in 43.5(2). Such a PWS must also provide filtration treatment which complies with the turbidity requirements of subrules 43.5(3), 43.5(4), and 43.5(5). Systems serving fewer than 10,000 people have been required to meet the turbidity requirements in 567 IAC 43.10(455B) since January 1, 2005. Subrule 43.5(3) requires the PWS to install filtration within eighteen months after the Department determines in writing that filtration is required. Subrule 43.5(3)"a" provides in part as follows:

43.5(3) Filtration.

- a. Applicability. A public water system that uses a surface water source or a groundwater source under the direct influence of surface water must provide treatment consisting of both disinfection, as specified in 43.5(2), and filtration treatment which complies with the turbidity requirements of subrules 43.5(3), 43.5(4), and 43.5(5)....Beginning January 1, 2005, systems serving fewer than 10,000 people must meet the turbidity requirements in 567—43.10(455B). A system shall install filtration within 18 months after the department determines, in writing, that filtration is required. The department may require and the system shall comply with any interim turbidity requirements that the department deems necessary. Failure to meet any requirements of the referenced subrules after the dates specified is a treatment technique violation.
- 10. Pursuant to subrule 43.5(3) as of January 1, 2005, systems serving fewer than 10,000 persons have been required to meet the turbidity requirements provided for by subrule 43.10(455B). This PWS is in violation of 43.5(3)"a" since the PWS system did not install filtration treatment that complies with turbidity requirements within eighteen months after the Department determined in writing that filtration is required. Pursuant to 43.5(3), failure by a PWS to meet any requirements of the referenced subrules after the dates specified in the subrules is a treatment technique violation.
- 11. The City was also required to meet the enhanced treatment requirements for *Cryptosporidium* pursuant to Department rule 43.11(455B). Department rule 567 IAC 43.11(455B) includes requirements, in addition to the filtration and disinfection requirements of 567 IAC 43.5(455B) and 567 IAC 43.10(455B), that "apply to all Iowa public water systems supplied by surface water or influenced groundwater sources". Subrule 43.11(1) provides in part as follows:
- 43.11(1) Applicability. The requirements of this rule are national primary drinking water regulations and establish or extend treatment technique requirements in lieu of maximum contaminant levels for *Cryptosporidium*. These requirements are in addition to the filtration and disinfection requirements of 567—43.5(455B), 567—43.9(455B) and 567—43.10(455B) and apply to all Iowa public water supply systems supplied by surface water or influenced groundwater sources.

12. By failure to complete the upgrade of the City's PWS treatment plant to comply with all surface water treatment requirements by the compliance schedule deadline of December 31, 2013, this PWS system was in violation of the compliance schedule and in violation of 567 IAC 43.5(455B); 567 IAC 43.10(455B) and 567 IAC 43.11(455B). PWS systems that have IGW source water but are not meeting surface water treatment requirements may be serving water that has parasites, viruses or other pathogens.

V. ORDER

THEREFORE, the Department orders the City to comply with the following provisions in order to abate and redress violations of Department rules and the facility's public water supply operation permit:

- 1. Complete construction of the City's upgraded water treatment plant as required by the City's water supply operation permit by June 1, 2014. Completion of construction means that the water treatment plant will be at full capacity, operational, and operating to meet the SWTR. This additionally means that the well side and the spring side are both operational and the new control system for the water treatment plant is operational.
- 2. You are required to pay an administrative penalty of \$10,000.00. The amount of \$2,000.00 of this administrative penalty is due within 30 days of receipt of this order. The City may elect to pay this \$2,000.00 amount as a Supplemental Environmental Project (SEP) to the Humboldt County Conservation Board (HCCB) in lieu of payment of \$2,000.00 to the Department. If the City elects to pay the SEP, payment of the SEP is required to be made within thirty days of receipt of this order signed by both parties. The City is required to document payment of the SEP to the Department's Legal Services Bureau within fifteen days of payment of the SEP.

If payment of the \$2,000.00 administrative penalty to the Department or payment of the SEP is not made by the City within 30 days of receipt of the order signed by both parties, a payment of \$10,000.00, the full administrative penalty assessed by the order, is due to the Department within 60 days of receipt of the order signed by both parties.

The amount of \$8,000.00 of the administrative penalty is waived if construction of the upgrade to the City's water treatment plant to ensure compliance with IGW requirements is completed and fully operational by June 1, 2014. If construction of the upgrade to the City's water treatment plant is not completed and fully operational by June 1, 2014, the amount of \$8,000.00 as the remainder of the administrative penalty is due by July 1, 2014, in addition to the \$2,000.00 amount referenced above.

VI. PENALTY

- 1. Iowa Code section 455B.191 authorizes the assessment of civil penalties of up to \$5,000.00 per day of violation for the violations involved in this matter. Iowa Code section 455B.109 authorizes the Commission to establish by rule a schedule of civil penalties up to \$10,000.00 that may be assessed administratively.
- 2. The Commission has adopted this schedule with procedures and criteria for assessment of penalties in 567 IAC chapter 10. Pursuant to this chapter, the Department has determined that the most effective and efficient means of addressing the above-cited violations is the issuance of an order with an administrative penalty. The administrative penalty assessed by this order is determined as follows:
- a. <u>Economic Benefit</u>. Operating a treatment plant that meets surface water treatment requirements requires much more daily oversight and monitoring and more laboratory analysis than operating a groundwater treatment plant. The delays in the installation and operation of an upgraded treatment plant that meets SWTR requirements has resulted in cost savings to the City for expenditures related to the staffing and operation of the upgraded facility. The City has saved a substantial amount of money that would have been spent for operator staffing time due to increased oversight hours, self-monitoring equipment costs, and laboratory costs for increased water sample analyses. All of these expenditures would be necessary upon completion of the upgrade to the City's water treatment plant and issuance of a water supply operation permit for the upgraded water treatment plant. Since the City did not notify the Department that it did not intend to collect the last two quarterly samples for MPA analysis in 2011, the City delayed further action by six months.

The City has continued to avoid the additional costs of operating an upgraded treatment plant that meets surface water treatment requirements since the City did not complete the upgraded treatment plant by December 31, 2013. Costs that have been avoided by the current delay and other delays include increased treatment plant operator staff hours for oversight of the upgraded facility once completed and operational and the additional laboratory analytical costs for total organic carbon (TOC), alkalinity, and sodium. These analyses would have included sampling for TOC once per month raw water; TOC once per month combined filter effluent (CFE); alkalinity once per month; and annual sodium analyses.

Delayed costs include the delays in contractor and materials costs of construction of the upgraded treatment plant; delays in purchasing appropriate self-monitoring equipment for operating a plant the meets SWTR requirements, delays in conducting *E. Coli* analyses for Long Term 2 Enhanced Surface Water Treatment Rule (LT2 ESWTR) requirements (2

samples per month for 12 months); and potential *Cryptosporidium* analyses for LT2 ESWTR, if necessary.

The actual economic benefit exceeds \$3,000 due to delays in upgrading the treatment plant to a surface water plant and operating it as such, which is more expensive to operate than a groundwater treatment plant. However, in light of the Department's statutory administrative penalty authority of \$10,000.00 per order, and the penalty calculation below, the Department is assessing only \$3,000.00 for this factor.

b. <u>Gravity of the Violation</u>. One of the factors to be considered in determining the gravity of a violation is the amount of penalty authorized by the Iowa Code for the type of violation. As indicated above, substantial civil penalties are authorized by statute. Despite the high penalties authorized, the Department has decided to handle the violations administratively at this time, as the most equitable and efficient means of resolving the matter.

The City has known that the source water for this PWS system is classified as IGW since February 2011 and that compliance with the surface water treatment water requirements was required. Department rules require that filtration be installed within eighteen months of notification in writing. By delaying compliance with the surface water treatment requirements and all applicable Department rules, the City is potentially exposing its water users to parasites, viruses and other pathogens since its source water is influenced by surface water. Human exposure to parasites, viruses and other pathogens can cause acute illness, chronic illness, and sometimes death.

Failure to comply with surface water treatment requirements at this facility is a threat to public health and safety. Having adequate water quality that meets the surface water treatment requirements is important to the administration of the State's safe drinking water program. The continued delays in upgrading the City's water treatment plant to meet surface water treatment requirements threaten the integrity of this program. Because of the importance of the drinking water program, \$3,000.00 is assessed for this factor.

c. <u>Culpability</u>. The City has known since February 2011 that its source water is classified as influenced ground water or IGW. FO 2 sent a letter to the City on February 11, 2011 indicating the City should move forward with upgrading the water treatment plant to a surface water treatment plant due to the influenced ground water classification. The Department's letter advised the City that if the City continued to run the plant as a groundwater treatment plant, disputing the influenced groundwater classification, then the City should collect quarterly water samples for MPA testing during 2011. The Department's letter required the City to respond to the Department in writing within thirty days of receipt of the Department's letter stating the City's intentions. The City did not respond in writing to the Department's letter.

When the City was required to collect quarterly water samples for MPA testing in 2011 because the City verbally disputed the influenced groundwater classification, the City only collected samples during the first two calendar quarters and did not collect those samples correctly. The City did not contact the Department to let the Department know it did not intend to collect the last two required quarterly samples during the third and fourth calendar quarters of 2011. Due to this failure to take the last two quarterly samples, the City delayed further action by at least six months. When the Department required installation of an upgraded treatment plant to meet surface water treatment requirements by August 10, 2013 through the City's water operation permit compliance schedule, the City requested an extension to December 31, 2013. The Department issued an amended water supply operation permit that included the extension to December 31, 2013 for completion of the water treatment plant upgrade. As of March 31, 2104, the upgraded treatment plant had not been completed.

There has been adequate time to comply with the City's water supply operation permit and Department rule requirements. Therefore, the amount of \$3,000.00 is assessed for this factor.

- d. <u>Mitigating Factor</u>. Ongoing delays by the City have resulted in more staff time needed by the Department to oversee this issue. The amount of \$1,000.00 is added to the total penalty for this factor.
- e. <u>Total Penalty</u>. The total penalty amount is \$10,000.00.

VII. WAIVER OF APPEAL RIGHTS

Iowa Code section 455B.175 and subrule 561 IAC 7.4(1), as adopted by reference by 567 IAC chapter 7, authorize a written appeal to the Commission. This order is entered into knowingly by and with the consent of the City. By signature to this order, all rights to appeal this order are waived.

VIII. NONCOMPLIANCE

Compliance with Section V. of this order constitutes full satisfaction of all requirements pertaining to the violations described in this order. Failure to comply with this order may result in the imposition of further administrative penalties pursuant to an administrative order or referral to the Attorney General to obtain injunctive relief and civil penalties pursuant to Iowa Code section 455B.191.

WHE !	Dated this 19th day of
WALTER JENSEN, MAYOR	· •
CITY ØF HÚMBOLDT	May , 2014
Bruce Transmer Co. Chricon	Dated this 23 day of
CHUCK GIPP, DIRECTOR	<u> </u>
IOWA DEPARTMENT OF NATURAL RESOURCES	

City of Humboldt—Public Water Supply Facility No. 4641064, Marie Leat—Water Supply Operations Section, Jeff Vansteenburg-Field Office No. 2, Diana Hansen—Legal Services Bureau, II.B.2.b.